



MEMORANDUM

To: Mayor and Members of Council
From: Brenda Librecz, Commissioner, Community & Fire Services, Phoebe Fu, Director, Environmental Services
Prepared by: Claudia Marsales, Senior Manager, Waste & Environmental Management
Date: May 12, 2020
Re: Memorandum to General Committee May 19th 2020 - Styrofoam Recycling Cost Analysis

RECOMMENDATION:

The purpose of the memo is to respond to General Committee’s question regarding the business case related to the Styrofoam Recycling Program that was part of the Single Use Plastic Reduction Strategy.

- 1. That the Memorandum – Styrofoam Recycling Program Cost Analysis (Single Use Plastics Program) be received.

BACKGROUND:

- Since 1999, Markham’s four Recycling Depots have accepted clean Styrofoam from residents. Styrofoam is recyclable but not accepted by York Region’s curbside Blue Box program. If Styrofoam is set-out at the curb, it is collected as part of the garbage stream.
• There is a North American market for Styrofoam to be recycled into building materials provided that the material can be adequately reduced in volume to render transportation cost effective.
• In 2011, Markham received grant from product producers (Continuous Improvement Fund – CIF) to purchase a Styrofoam densifier. It is located in a shed at 8100 Warden Avenue
• The costs to purchase and install the densifier are outlined below:

Table with 2 columns: Description and Amount. Rows include Original Project Funding (Total Cost to purchase & install equipment: \$91,090 (A); CIF Funding: (\$56,090); City Funding: \$35,000) and Actual Expenditures (Installation/Inspection/Purchase: \$85,910 (B); Funds Remaining: \$5,180 (A-B); Revised City Funding: \$29,820).

STYROFOAM COLLECTION AND PROCESSING COSTS:

There are two ways Markham residents can dispose of styrofoam: leave it at the curb to be collected by Miller Waste as garbage, or drop clean styrofoam off at a one of Markham’s Recycling Depots. Markham’s Recycling Depots receive approximately 27 tonnes of Styrofoam annually.

Further, Northumberland County and York Region do not own or operate densifiers. Therefore, they pay the City to process their clean Styrofoam.

The City's overall Styrofoam program costs \$100K annually, utilizing The Recycle People (third party contractor) for the transport, processing and marketing of the material. The various revenue sources offset the program's costs by \$97.3K resulting in an annual net cost to the City of \$2,700.

Table below summarizes the cost related to Styrofoam between the two methods:

	Method 1: Garbage	Method 2: Markham Depot / Densifier
Collection	As Markham's waste collection is paid on a per household basis, there is no impact on collection costs At the time of starting this initiative, Markham was paying for their waste by the tonnes versus per household. Hence there was cost saving by having it dropped off at the depots.	Resident drops clean Styrofoam at Markham's Recycling Depot, therefore there are no collection costs
Transport & Disposal	York Region pays the costs to transport and dispose of garbage at a cost of \$100/tonne This would equate to \$2,710 of cost annually if the current 27 tonnes of Styrofoam that is currently recycled were to end up in the garbage stream	The City's current Styrofoam recycling program is operating at a net cost of \$2,700 per year.

A minor increase in volume is projected at the Recycling Depots as a result of the proposed ban on curbside packaging Styrofoam. This will have minimal cost impact to the City's operating costs.

ENVIRONMENTAL BENEFITS:

Styrofoam is 5% plastic and 95% air. These qualities make it an excellent packing material for industry as it reduces transport costs and is easily molded to protect shipped products.

Since there is a recycling market for Styrofoam, taking the leadership in collecting it at the City's Recycling Depots and then advancing it to recycling markets has a high environmental value.

The City undertook the densification of Styrofoam to significantly reduce the transport costs of shipping it to recycling markets. The densifier compacts Styrofoam at a 20:1 ratio. Prior to the acquisition of the densifier, the City was sending approximately 100 full trailer loads of loose Styrofoam to markets per year. **By densifying Styrofoam, Markham reduced the number of annual transport loads by 95% while shipping the same volume of material.** This results in lower costs, reduced greenhouse emissions, and advances the recycling of Styrofoam into productive uses. The program is cost effective and highly beneficial to the environment.

By recycling Styrofoam and banning packaging Styrofoam from the waste stream, Markham is significantly reducing the volume of Styrofoam going to landfill or ending up as litter in parks and streams.

CONCLUSION

Markham residents have been recycling Styrofoam at the depots since 1999. With minimal costs to the City, Markham's Styrofoam recycling program has contributed to the City's high diversion rate of 82% and has helped position Markham as a world class leader in the 3R's. By investing in the densification process, Markham has been able to recycle Styrofoam into a useful product and also helped support both York Region and Northumberland County's Styrofoam recycling programs.